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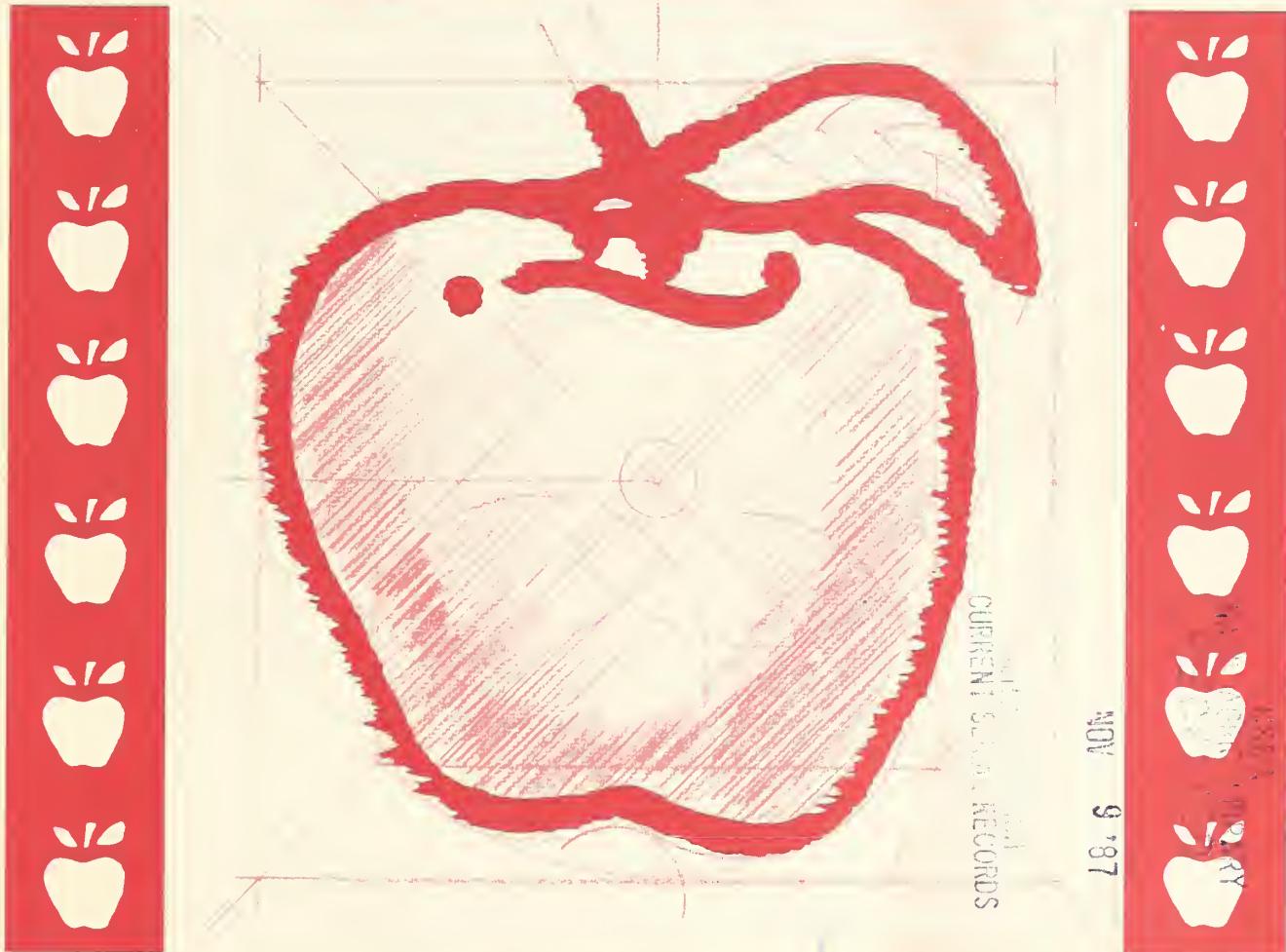
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Cooperatives in the Apple Industry

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Abstract

Cooperatives in the Apple Industry

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Sixty-four apple marketing, processing, contracting and bargaining cooperatives accounted for 27 percent of the total apple crop in the United States in 1984. They were responsible for 17 percent of the fresh and 41 percent of the processed apples. Forty-four percent of the apples utilized for canning, 41 percent of those used in juice and cider, and 33 percent of frozen apples passed through these associations.

Important concerns of apple cooperatives were overproduction, increasing imports of apple juice concentrate, decreasing exports of fresh apples, quality control, and rising costs.

All types of associations utilized facilities to a high degree and the majority planned to expand over the next 5 years to provide adequate facilities for handling the expected increases in volume of members' production.

Key Words: Cooperatives, apples, fresh marketing, processing, contracting, bargaining

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Preface

Apples ranked first among 12 selected noncitrus tree fruits produced in the United States in 1984. They accounted for 53 percent of tonnage and 47 percent of value. Seven States in three regions produced 80 percent of the Nation's commercial crop.

This report presents a brief overview of the U.S. apple industry but focuses on the role of cooperatives in the industry. It examines the functions these associations perform, the number of members served, organization and operation, and problem areas faced by the associations and their members.

There were 64 apple marketing, processing, contracting, and bargaining associations in the United States in 1984. Seventeen percent of fresh and 41 percent of processed apples passed through these associations. They accounted for 27 percent of the total apple crop.

Indepth interviews were held in 1984 with managers of 24 apple cooperatives. They included six fresh marketing, seven marketing both fresh and processing apples, four contracting, and seven processing associations. They served 6,434 grower members, 32 member cooperatives, and 732 nonmember growers.

Acknowledgment is made to the managers of the apple marketing, processing, contracting and bargaining associations, leaders in the apple industry, and other State and USDA agencies.

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Highlights

The 64 apple marketing, processing, contracting, and bargaining cooperatives played an important role in the U.S. apple industry in 1984, accounting for 17 percent of fresh and 41 percent of processed apples. In-depth discussions were held with managers of 24 of these cooperatives. Included were 6 of 41 fresh marketing associations, 7 of 11 marketing both fresh apples and apples for processing, 4 of 5 contracting for processing apples, and 7 of 8 processing associations.

The most important service was providing outlets for growers' apples. Fifty-four percent of the cooperatives had their own sales offices. The remaining cooperatives were equally split in their sales efforts in using (1) private sales agents, (2) federated sales agents, or (3) contracting and bargaining. A high proportion of fresh marketing and fresh and processing apple marketing associations provided both regular and controlled atmosphere storage. This is an effort to extend the marketing season and provide high-quality apples for consumers.

The 24 interviewed cooperatives served 6,434 grower members, 32 member cooperatives, and 732 nonmember growers in 1984. Most of the associations held to the one-member, one-vote rule. Many have restrictions on membership. Processing cooperatives required larger investments per member for joining; however, fresh marketing and fresh and processing apple marketing associations had more equity per member. Seventy-one percent of the associations had marketing contracts. Thirty-eight percent required delivery of all growers' tonnage or acreage and the same proportion required a specified tonnage or acreage. The average size of the board of directors was 11 but ranged from 5 to 32. Some associations elected a young producer to be an advisor to the board. This provided for valuable on-the-job training, the possibility of bringing in younger board members, and increasing interest among members.

The cooperatives were significant providers of employment opportunities in their rural areas. The 24 cooperatives employed 2,575 full-time persons and 2,898 part-timers.

Four methods of paying producers were used: pooling, individual grower account, individual association account, and growers paid directly by buyer. Pooling, the most common, accounted for 68 percent.

Total grower charges for marketing a 42-pound box of fresh apples ranged from \$3.85 to \$5.90. Variation was a result of differing services, e.g., regular storage vs. controlled atmosphere, and of geographic differences.

Although many cooperatives had their own sales offices, 53 percent of the volume was sold through brokers. Seventy percent of the sales were f.o.b., whereas 30 percent were delivered. The associations shipped 94 percent of their volume by truck and 6 percent by rail. Eighty-six percent of the volume of the 24 associations was inspected by Federal-State Inspection Service. All types of the apple cooperatives sold some volume of apples under their own labels with fresh marketing associations selling 89 percent of their volume under their own label.

A high proportion of contracting associations had definite policies for establishing prices. Other types used flexible informal policies relying on information from trade contacts, Federal-State Market News, private news sources and brokers.

Forty-six percent relied entirely on per-unit retains for equity capital during the last fiscal year and 38 percent on retained patronage. Thirty-three percent of the associations had a revolving period of 10 years or more and 38 percent had no revolving period for their equity capital. Thirty-three percent provided some method of returning members' equity at retirement.

Major problems included overproduction or excess supply, imported apple concentrate, exports of fresh apples, the high costs of operations, and maintaining consistent product quality.

With the oversupply situation, all types of associations were utilizing their facilities to a high degree. Yet, the majority of the apple cooperatives planned expansion over the next 5 years to provide facilities for handling the expected increased volume of members' fruit.



Cooperatives in the Apple Industry

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Apples are a temperate zone crop and the United States produced about 9 percent of the total world supply in 1984. Although the Nation's apple crop is widely dispersed, climate, geography, and the profitability of alternative crops have concentrated commercial production in three distinct regions of the country and certain States within those regions: the Pacific region (Washington and California); the East (New York, Pennsylvania, Virginia, and North Carolina); and North Central region (Michigan). In 1984, the seven States in those regions accounted for 80 percent of the Nation's commercial crop with Washington alone producing about 36 percent of the total (table 1).¹

About 57 percent of the apple crop is sold fresh and the remainder is processed (fig. 1). The most dramatic increase in processed apple products has been in production of juice (fig. 2).

There were 766 apple shippers at 414 shipping points throughout the United States in 1984 (fig. 3). The term shipper as used here includes firms at shipping points where apples are produced. Many of these firms, including cooperatives, also deal in other fruits and vegetables.

Apples ranked first among the noncitrus tree fruits grown in the United States in 1984. They accounted for 53 percent of the utilized tonnage and 47 percent of value of 12 selected noncitrus tree fruits grown in the contiguous United States (table 2).

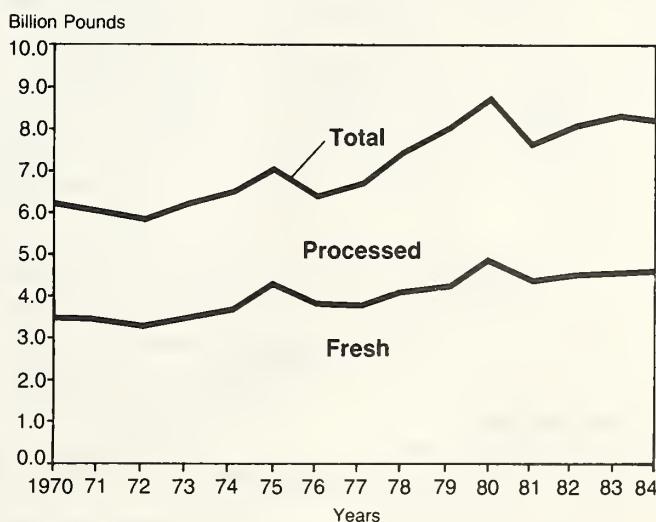
Per capita consumption of fresh apples exceeded oranges, grapefruit, peaches, grapes, or pears, between 1970 and 1984. In 1984, per capita consumption of fresh apples was 18.1 pounds compared with fresh oranges at 12.8 pounds (table 3).

Total per capita consumption of apples and apple products varied between 27.0 and 36.0 pounds from 1975 through 1983 (table 4). Per capita consumption of fresh apples varied between 16.9 and 19.1 pounds during the same period. Per capita consumption of canned, frozen, and dried apples remained relatively stable during this time. The most dramatic increase was in apple juice, which increased from 4.4 pounds per capita in 1975 to 13.2 pounds in 1983. This accounts for most of the increase in per capita consumption of apple and apple products.

APPLE COOPERATIVES

There were 64 cooperatives in the United States that marketed, processed, contracted, and/or bargained for apples in 1984 (fig. 4). These associations were

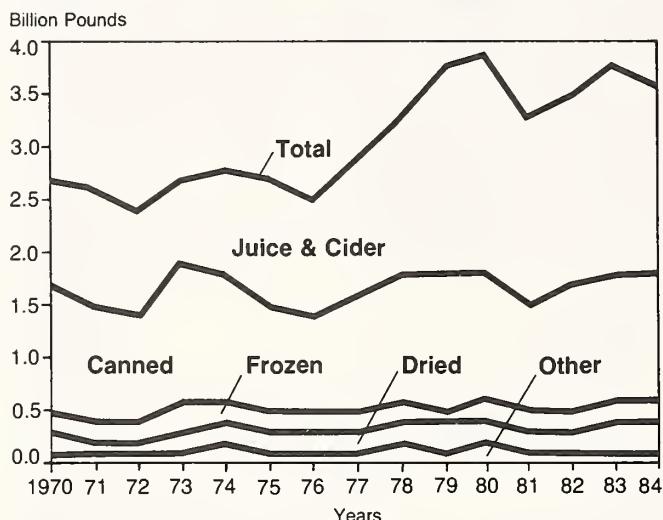
Figure 1—Fresh and Processed Apple Crop Utilization, 1970-84



Source: Appendix Table 1

¹Tables are grouped at the end of the text.

Figure 2—Processed Apple Crop Utilization, 1970-84



Source: Appendix Table 2

Figure 4—Distribution of 64 Apple Cooperatives by Regions, United States, 1984

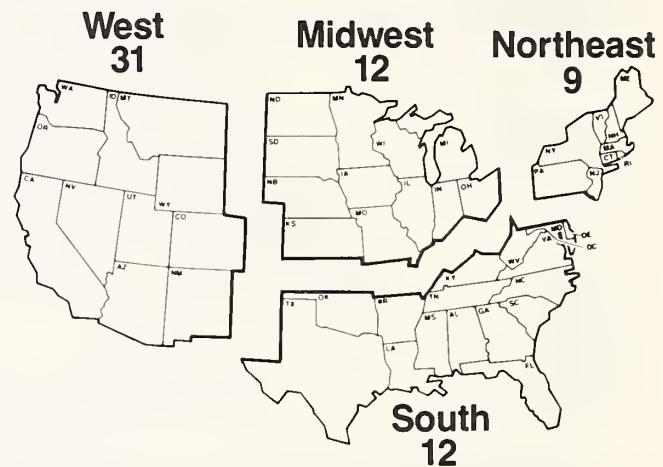


Figure 3—Fresh Apple Shippers at Shipping Points



Source: The Packer's 1984 Produce Availability and Merchandising Guide, P.O. Box 2939, Shawnee Mission, Kansas 66201

responsible for 17 percent of the fresh apples and 41 percent of the processed apples (table 5). Forty-four percent of the apples used for canning, 41 percent of the apples used in juice and cider, and 33 percent of apples used for frozen apples passed through these associations. They accounted for more than 27 percent of the apples used in 1984.

Type of Association

The 64 apple associations were classified according to their primary activity (table 6). Forty-one were engaged primarily in packing and marketing fresh apples but also handled other fresh fruit products. These associations disposed of their cull apples to processors; however, their primary volume was in fresh fruit. This group included two federated sales agencies that sold fresh fruit for their locals engaged in packing fruit.

There were 11 cooperatives packing and selling fresh apples along with other fresh fruits and also selling substantial volumes of processing apples for growers. These associations were classified as fresh and processing apple marketing cooperatives. They did not process apples but merely handled processing apples for members. They may also store apples until sold to processors.

A third group of five associations were classified as contracting for processing apples. These associations did not handle apples but contracted with processors for their growers' processing apples. In most cases, the cooperative contracted with a specific corporation for the output of its growers. One was a bargaining association that negotiated for price and terms of trade with several corporate processors on behalf of its grower members who signed contracts with individual processors.

Seven associations were classified as apple processors but also processed other fruits and vegetables. In addition, one association had both fresh packing and processing facilities. Most of this association's apples were marketed fresh; therefore, it was classified as a fresh marketing association. For determining cooperative share, its volume was classified under method of utilization.

Discussions were held with managers of 24 apple cooperatives in 1984. Included were six fresh marketing associations, seven marketing both fresh apples and apples for processing, four contracting for processing apples, and seven associations processing apples.

The six fresh marketing associations accounted for more

than 60 percent of the volume of the 41 fresh marketing associations. The seven associations marketing both fresh and processing apples accounted for half of the fresh and more than 75 percent of the processing apples of the 11 associations marketing both fresh and processing apples. The four associations contracting for processing apples and the seven associations processing apples accounted for virtually all of the contracted apples and processed apples of those associations contracting and processing apples.

Fifty-nine percent of sales of the 24 cooperatives were apples (table 7). Apple sales for the fresh marketing associations represented 74 percent of total sales with a range of 49 to 93 percent. Apples comprised 76 percent of sales for associations marketing both fresh and processing fruit.

Associations contracting for processing apples also contracted for other items. Apples accounted for 24 percent of value of products contracted although the range was from 7 to 100 percent. Apples were 61 percent of processing associations sales with a range from 8 to 100 percent.

Other Fruit and Vegetables Handled

The 24 associations handled 26 other fruits and vegetables during 1984. This included 9 different fruits, 3 different berries, and 14 different vegetables. Twenty-five percent of the associations handled apples only (appendix table 3).

Pears and cherries were handled by more than 45 percent of the associations. All fresh marketing associations handled pears, and more than 42 percent of those marketing both fresh and for-processing apples handled pears. Cherries were handled by 33 percent of fresh marketing associations, 75 percent of those contracting for processing apples, and 71 percent of processing associations.

More than 20 percent of the associations handled peaches and plums. A few handled various other fruits and vegetables. Some handled several different commodities. In most instances, the associations tried to accommodate their members by handling the fruits and vegetables they produced insofar as feasible.

Services Performed

The most important service of the 24 associations was to sell or provide an outlet for the growers' apples. Fifty-four percent had their own sales offices (appendix table

4). The remaining cooperatives were split equally in their sales efforts in using private sales agents, federated sales agents, or contracting and bargaining.

More than 71 percent of associations marketing both fresh and processing apples had their own sales agencies. This was also true for processing cooperatives. Thirty-three percent of fresh marketing cooperatives had their own sales offices, another 33 percent relied on federated sales agencies, and the other 33 percent used private sales agencies to sell their members' apples. Seventy-five percent of associations contracting for processing apples contracted directly with a second party for the grower. One association bargained directly with corporate processors on behalf of the grower; however, the grower contracted directly with the processor.

The second most important service was storage. Fifty percent of the associations provided both regular storage and controlled atmosphere for growers. Eighty-three percent of fresh marketing associations and 86 percent of those marketing both fresh and processing apples provided these services.

Grading and packing were important for associations selling fresh apples. Eighty-three percent of fresh marketing associations provided these services. Eighty-six percent marketing both fresh and processing apples provided these services for fresh apples they marketed.

Canning, bottling, freezing, and drying were provided by 57 percent of processing associations.

Only about 16 percent of the 24 associations provided supplies.

ORGANIZATION AND OPERATION

Membership

The 24 associations had 6,434 grower members and 32 member cooperatives and served 732 nonmember apple growers (table 8).

Ten associations had open membership while 14 imposed some type restriction on membership (table 9). Half of those imposing restrictions required approval of the board of directors before a grower could join. Three associations had closed memberships for various reasons. One expected to take in new members in 2 years while another was closed until current members paid off certain obligations. Other restrictions included rather large initial

investments by new members. These were primarily processing cooperatives that required substantial investment in processing equipment.

Requirements for new members varied greatly. Investment in stock of the associations varied from nothing up to \$5,000. Usually the stock price was nominal. The higher investment requirements were in processing associations. In some instances, new members were required to invest according to the number of tons they intended to deliver to the association.

For 54 associations for which data were available for computation of equity per member, the evidence seems to conflict with the investment requirements for new members. In the 10 associations that handled both fresh and processing apples, equity per member varied from \$200 to \$59,000 and averaged \$34,000 per member (table 10). Fresh marketing associations ranged from \$1,000 to \$115,000, an average of \$17,000. Equity per member for the five processing associations ranged from \$5,000 to \$165,000, an average of \$12,000. The three associations contracting for processing apples ranged from \$2,000 to \$7,000, an average of \$4,000.

Associations contracting for processing apples had the lowest average equity per member. These associations did not own packing or processing equipment. They existed only to make contracts with processors.

It would not be expected that associations marketing fresh and processing apples and those marketing fresh apples have higher equity per member than associations processing apples. However, many associations had investment in both regular and controlled atmosphere storage facilities, which are expensive to build and operate.

Also, the processing associations had an average membership of 1,023, compared with the fresh marketing average of 91 and the fresh and processing marketing associations average of 54. The larger membership was probably responsible for the lower equity per member for the processing associations.

Eighty-seven percent of associations contacted adhered to the one-member, one-vote rule (table 11). All associations contracting for processing followed this rule. One association marketing fresh apples, one association marketing both fresh and processing apples, and one processing association voted according to patronage.

Marketing Contracts

Seventy-one percent of the associations had marketing contracts (table 12). All fresh marketing associations contacted and all those contracting for processing apples had marketing contracts. Forty-three percent of associations marketing both fresh and processing apples had contracts with growers. Fifty-seven percent of processors had contracts with growers. The processing associations who did not have marketing contracts with growers either required some apples to be delivered to be processed each year in order to maintain membership or required a large capital investment for a given volume. In one situation, the grower would lose membership for not delivering some processing apples to the association. In the other situation, the grower would not utilize investment in the association.

Thirty-eight percent of associations required delivery of all the growers' tonnage or acreage while 33 percent required the delivery of a specified tonnage or acreage (table 13). Delivery requirements varied by type of association. Eighty-three percent of fresh marketing associations required growers to deliver all their tonnage or acreage to the association while 17 percent required a specified tonnage or acreage. In the first instance, the cooperative was getting the entire output of the grower while in the second, the association received only the specified acreage or tonnage the grower pledged to deliver.

Forty-three percent of associations marketing both fresh and processing apples for growers required delivery of all the growers' tonnage or acreage. Because 57 percent of these associations had no contracts with growers there were no delivery requirements. All associations contracting for processing apples required delivery of a specified tonnage or acreage. In this situation, the cooperative knew the tonnage or acreage available from growers but growers did not necessarily commit their total crop to the association.

Fourteen percent of processing associations required growers to deliver all of their acreage or tonnage and another 43 percent required delivery of a specified tonnage or acreage. Forty-three percent did not require delivery of processing apples to the association, but if growers failed to deliver some apples they lost their membership or failed to utilize a large investment in the association.

Thirty-three percent of associations had contracts of 1-

year duration, 13 percent were for 5 years, 4 percent were for 3 years, and 21 percent were continuous (table 14). The duration of the contracts was not consistent by type association. Fifty percent of fresh marketing associations had contracts of 1-year duration while 25 percent of those associations contracted for processing apples had a similar contract. Fifty percent of fresh marketing associations and 14 percent each of the fresh and processing marketing and processing associations had continuous contracts.

Sixty-seven percent of associations had a contract withdrawal period of 1 year (table 15). This is accounted for by the fact that even with a 3-year, 5-year, or continuous contract, a grower could usually withdraw by giving notice within prescribed limits.

Facility Utilization

Fresh marketing associations utilized facilities at 84 percent of capacity (table 16). About half of the associations planned to expand their storage facilities in the next 5 years.

Associations marketing both fresh and processing apples were utilizing facilities at 93 percent capacity for fresh and 94 percent for processing apples. Eighty percent of these associations planned to expand their storage facilities.

Those associations contracting for processing apples had no facilities for handling processing apples; so they could expand without incurring a great deal of expense. They were utilizing their facilities to 57 percent of capacity with a range of from 40 to 100 percent. Only one planned to expand. If necessary, these associations could expand by increasing office space and hiring a few employees. The essential factor would be if they signed up many new members.

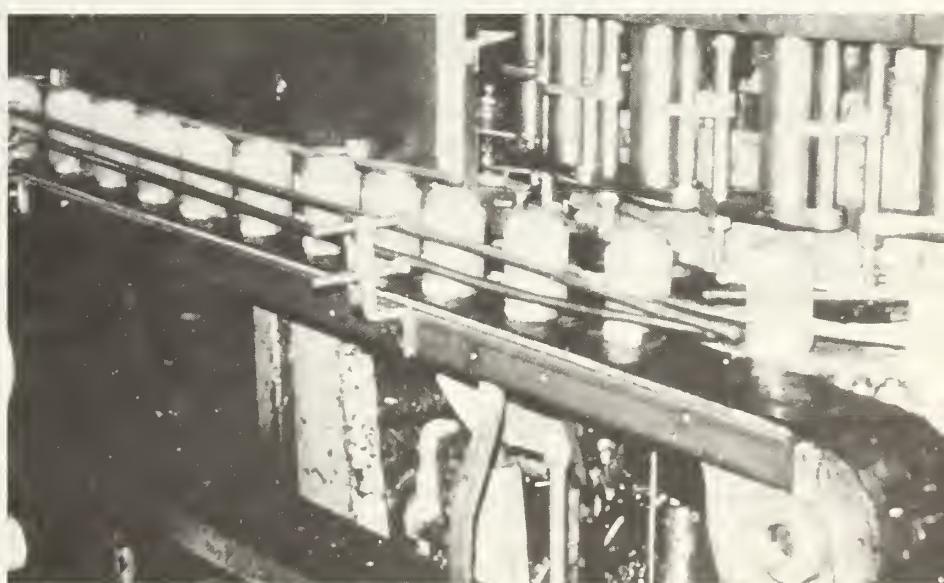
The processing associations were utilizing facilities at 92 percent of capacity with a range of 30 to 100 percent. Forty-three percent planned to expand in the next 5 years. Those not wishing to expand planned to update facilities to the state-of-the-art but not to expand. This was true of the fresh marketing associations as well as those marketing both fresh and processing apples.

Directors

The average size board of directors was 11 with a range of from 5 to 32 (table 17). Those associations contracting



Clockwise, from left: Sliced dehydrated apples; bee pollinating an apple blossom; juicy red apples ready for harvest; inspecting a crop of apples at the processing plant; Tree Top cooperative's popular apple stand at Disneyland. Next three photos show apple sauce, apple juice, and frozen concentrated juice going through processing line. (Bottom photos left and right



courtesy Washington State Apple Commission. All
others courtesy Tree Top Inc., Selah, WA
cooperative.)

for growers' processing apples had the larger boards. The average size board for this group was 16 with a range of 10 to 32 members. Fifty percent of fresh marketing associations and more than 25 percent of associations marketing both fresh and processing apples had a system which provided for the election of a young grower to serve on the board for 1 year in an advisory capacity. This allowed the young growers to get experience at board meetings and have some input even though they could not vote. It was explained that this helped the young growers decide whether they wanted to serve on the board in the future without displacing experienced board members.

In two-thirds of the associations, directors served 3-year terms (table 18). Eighty-three percent of fresh marketing associations, 57 percent of the associations marketing both fresh and processing apples, 50 percent of those contracting for processing apples, and 71 percent of processing associations had 3-year terms for their directors. Two associations had indefinite terms for their directors; in both all members were on the board. In one, directors served as long as they were members. In the other, the member was on the board until certain obligations to creditors of the association were satisfied.

In all associations, regardless of type, directors were permitted to serve successive terms. Some limitations were placed on the successive terms by three associations. One fresh marketing association allowed a director to serve no more than four successive terms. Two associations marketing both fresh and processing apples allowed directors no more than five successive terms.

Employees

The 24 apple cooperatives employed 2,575 full-time persons and 2,898 part-timers. The processing associations employed an average of 317 full-time persons with a range of 40 to 900 (table 19). They also employed more part-time personnel, averaging 454.

Those associations contracting for growers' processing apples averaged only 3 employees with a range of from 1 to 3. These associations did not need many employees because they did not handle or process apples, but contracted with processors for the growers. In two instances, the employees were paid and furnished office space by the processor as a part of the contract with the association.

PAYMENTS TO MEMBER GROWERS

Four methods of payment were used by the 24 apple cooperatives (table 20). The pool method was the most popular, accounting for 68 percent of the volume. However, there were considerable differences in methods of payment by type association.

The fresh marketing associations used the pool method for 60 percent of volume and individual association accounts for 40 percent. This group included a regional sales agency that handled sales for several local packing associations. Because most of the local associations probably used pooling, it could be concluded that most of the volume of this group was pooled.

Associations handling both fresh and processing apples for their growers pooled for 88 percent of volume and paid growers directly for 12 percent.

Associations contracting for growers' processing apples used the pool payment plan for 21 percent of volume, individual growers' account for 12 percent, and growers were paid directly by buyers for 67 percent. The bargaining association was responsible for the high proportion of direct payment to growers by buyers in this group. This association bargained with corporate processors and growers were paid directly by processors with the association receiving a checkoff from processors.

Processing associations used the pool payment method for 89 percent of their volume, and individual growers' account for 11 percent.

Marketing Charges

There was a wide variation in charges for marketing growers' fresh apples. Regular atmosphere storage varied from 50 to 60 cents per box while controlled atmosphere storage varied from \$1.00 to \$1.10 per box. Packing charges varied from \$1.00 to \$3.90 per box. Selling charges varied from 20 to 40 cents per box. Total grower charges for marketing a 42-pound box of fresh apples varied \$3.85 to \$5.90 per box. The variation was the result of differing services, e.g., regular versus controlled atmosphere storage, and geographic differences.

SELLING ARRANGEMENTS

Method of Sale

Fifty-three percent of volume of the 24 associations was sold through brokers, 21 percent through contracts, 15 percent direct to chain stores, 4 percent through cooperative sales agencies, 3 percent direct to other buyers and direct to processors respectively, and less than 1 percent was sold direct to other packers (table 21).

The different type associations used different sales methods. Fresh marketing associations used brokers for 60 percent of sales, 25 percent was sold directly to chain stores, 13 percent through cooperative sales agencies, and about 2 percent was sold direct to buyers other than chain stores.

Fresh and processing apple marketing associations used brokers for only 33 percent of their sales volume. They sold another 28 percent direct to chains and 35 percent direct to processors.

Associations contracting for growers' processing apples sold 98 percent of volume under contracts with processors. As previously pointed out, one was a bargaining association that acted as an agent for its growers. The association did not take title to the apples and the grower delivered the apples directly to the processor. The contract was between the processor and the grower.

Processing cooperatives made the most extensive use of brokers. Brokers accounted for 77 percent of sales volume, while about 14 percent was sold direct to chains and another 5 percent was sold direct to other buyers. Only about 3 percent went through cooperative sales agencies.

Terms of Sale

Seventy percent of sales of the 24 associations were f.o.b. and 30 percent delivered (table 22).

All the volume of fresh marketing associations was sold on an f.o.b. basis. Seventy-four percent of sales of associations selling both fresh and processing apples were on an f.o.b. basis, while 26 percent were on a delivered basis. Most sales of those associations contracting for growers' processing apples were made on a delivered basis. The processing associations, on the other hand,

sold 86 percent of volume on an f.o.b. basis and 14 percent on a delivered basis.

The seller assumes all risks of loss or damage in transit not caused by the buyer in the delivered sale. The buyer assumes all risk of damage and delay in transit that is not caused by the seller in the f.o.b. sale.

Method of Shipping

The 24 associations shipped 94 percent of their volume by truck and 6 percent by rail (table 23). All types of associations shipped well over 90 percent by truck. All apples of the contracting associations were hauled to processing plants in trucks. The fresh marketing associations shipped 8 percent of their volume by rail, while the processing associations shipped 7 percent.

GRADING AND INSPECTION

Eighty-six percent of the volume of the 24 associations was inspected by the Federal-State Inspection Service (table 24). The fresh marketing associations used it for all their volume as did associations contracting for processing apples. Seventy-three percent of the volume of processing associations was subject to Federal-State inspection while the associations relied on their own inspection for 27 percent.

The fresh marketing associations seemed interested in seeing that a quality apple reached the consumer, while Federal-State inspection of processing apples sold for growers by contracting associations was necessary to determine what the grower should be paid. The growers' payment depended on the quality of apples delivered for processing.

It appeared that the associations were making good use of services of the Federal-State Inspection Service.

BRAND POLICY

All types of the 24 apple cooperatives sold some volume under their own labels (table 25). Fresh marketing associations sold 89 percent of volume under their own labels and 11 percent under other buyers labels. Processing associations sold 64 percent of volume under their own labels and 35 percent under other buyers labels.

Associations marketing both fresh and processing apples sold 58 percent under their own labels, 4 percent under other buyers labels, and 38 percent unlabeled in bulk.

Associations contracting for growers' processing apples sold 86 percent unlabeled in bulk. This would be expected where apples are usually delivered in bulk to processors. There were some associations who, even though they delivered in bulk to processors, had indirect access to processors' labels through contractual arrangements whereby they shared in the returns from sale of the final processed products.

PRICING POLICIES

The 24 associations followed flexible policies in determining the day-to-day prices quoted for apples. Telephone contacts with the trade and the Federal-State Market News Service as well as private news sources were most frequently used in helping to determine prices. Brokers were relied on by both fresh marketing and processing associations.

Seventy-five percent of contracting associations had definite policies for establishing prices for processing apples. The policies varied from establishing a zone pricing system, to bargaining with processors, to determining a commercial market value for apples used in processing.

In some instances, where private sales agencies or federated sales agencies were selling apples for local associations the local association could accept or reject the offer.

EQUITY CAPITAL

Forty-six percent of the 24 associations relied entirely on per-unit capital retains to acquire equity capital during the previous fiscal year (table 26). Thirty-eight percent relied on retaining patronage for equity capital. Two associations relied on both per-unit capital retains and retained patronage. Two associations relied on direct cash investment for equity capital.

Fifty percent of fresh marketing associations relied solely on retaining part of the patronage and 57 percent of processing cooperatives relied on this method. Fifty-seven percent of associations marketing both fresh and processing apples relied entirely on per-unit capital retains to acquire equity capital during the previous fiscal year, while 50 percent of those associations contracting for processing apples relied on this method.

Thirty-three percent of the 24 associations had revolving periods of 10 years or more while another 38 percent had no revolving period (table 27). Fifty percent of fresh

marketing associations had a revolving period of 10 years. Thirty-three percent of the 24 associations provided some method of returning members equity when they retired or discontinued farming. In most cases, the growers could sell their equity along with the orchard, or they could sell their stock to another grower or back to the association when they retired or discontinued farming. In most instances, the association's board of directors must approve the transfer or the new member purchasing the equity. In two instances, the associations returned the equity capital to the growers when they retired or discontinued farming.

PROBLEM AREAS

Overproduction or supply seemed to be a most important problem for all types of associations (table 28). It was considered especially important for fresh marketing cooperatives and those associations contracting with apple processors. Some growers continued to plant trees while other growers were going out of business. New planting were going in without giving much thought to where or how the apples would be marketed, or contracted for processing 4 or 5 years down the road. One association manager indicated that the Tax Act of 1981 was too liberal on depreciation schedules. Nongrowers were using orchards for tax shelters, making survival difficult for a medium-size grower operating an orchard as a sole source of income.

Imports were an important problem for apple processing cooperatives. Imported foreign concentrates seemed to worry most apple processors. In some instances, it was mentioned that imported apple concentrates could be delivered to plant doors for less than the cost of processing local growers' apples. It was pointed out that this was happening while some local growers were going out of business. It was also indicated that foreign producers were allowed to use certain pesticides on apples while domestic growers were not.

Imported Apple Juice Concentrate

These concerns seemed justified. Imported apple juice concentrate has increased from 70 to 209 million gallons (single strength) from 1980 to 1984 (table 29). In terms of bushels equivalent, imported apple juice concentrate has increased from about 28 percent of the total bushels used for juice in the United States in 1980 to more than 56 percent in 1984 (fig. 5). The threefold increase in imported apple juice concentrate over this period has had its impact on outlets for U.S. growers' juice apples.

Figure 5—Share of Imported and Domestic Bushel Equivalents Used in Apple Juice, United States, 1980-84

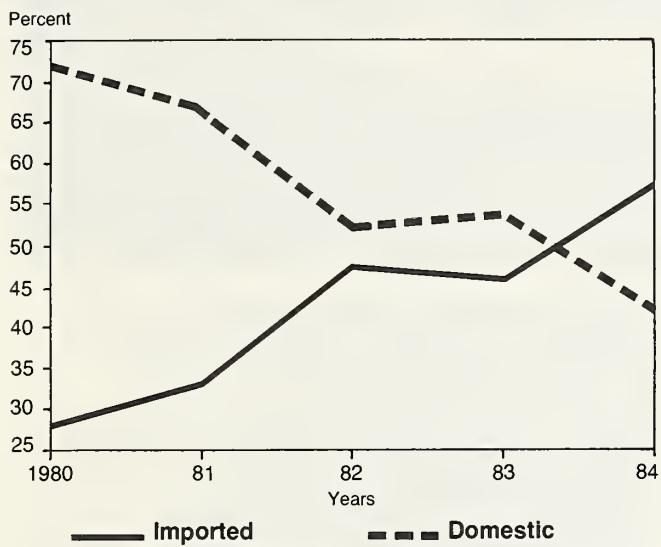
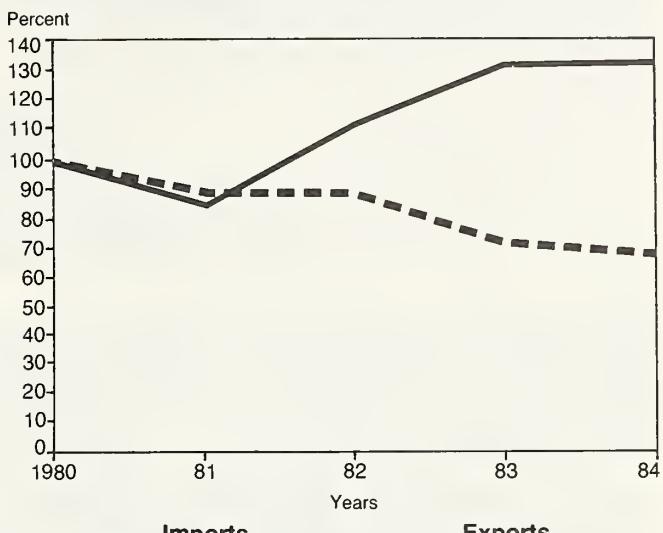


Figure 6—Proportionate Change in Fresh Apple Imports and Exports, United States, 1980-84



Exports were considered an especially important problem by fresh marketing cooperatives. Among the reasons given for this problem were the high price of the dollar, high tariffs imposed on U.S. apples by some countries, and low-quality apples getting into the export market.

U.S. Apple Balance of Trade

The concerns of fresh apple exports seem also to be justified. Fresh apple exports declined from 16 to 11 million boxes from 1980 to 1984 (table 30). During the same period imports increased from 4.1 to 5.4 million boxes. While exports decreased 32 percent between 1980 and 1984, imports of fresh apples increased more than 31 percent (fig. 6).

The U.S. net balance declined from 11.9 to 5.4 million boxes between 1980 and 1984. Exports made up 79 percent of the total fresh apple trade in 1980 compared with 67 percent in 1984.

If the total U.S. apple trade—including both fresh apples and apple juice concentrate—is considered, the picture is more difficult. The United States has gone from a deficit balance of 7.7 to 52.8 million boxes between 1980 and 1984. The deficit in apple trade has increased almost sevenfold.

Quality was an important problem for fresh marketing cooperatives. Some reasons advanced for this problem included inconsistencies in quality due to weather conditions, too many different kinds of packers and brokers in the market making it difficult to maintain consistent quality, and the failure to recognize that in a buyers' market you must provide buyers with what they want to get repeat orders.

Costs were indicated as a second most important problem by all types of apple cooperatives. The reasons given included the cost of processing, wage rates which growers must pay for harvesting, the cost of operating funds and capital improvements, and higher costs due to taxes and regulatory burdens on the agricultural industry.

FUTURE ROLE

Although overexpansion was indicated as a major problem in the apple industry, 60 percent of apple cooperatives planned to expand in the next 5 years (table 31). This included all types of associations. However, for some types this role was more important than others. More than two-thirds of fresh marketing associations planned to expand compared to 57 percent of associations marketing both fresh apples and apples for the processing market. Half of those associations contracting apples for

processing planned to expand while only 28 percent of apple processors planned expansion in the next 5 years.

The most important reason for expanding was to provide facilities for handling the expected increased volume of members' fruit. Some associations expected to increase storage facilities to extend their marketing season. Others wanted to spread fixed costs over a larger volume and thus lower per-unit costs.

Twenty-six percent of the associations planned to handle all members' fruit. These associations were not planning to increase membership but indicated they wanted to do a better job of serving current members. They emphasized such things as improving quality and label reputation, providing the best handling and packing facilities, improving marketing of apples, and exerting greater leadership in the apple industry. These associations were found in all four types.

Some associations were interested in developing new processed apple products that would increase consumption and provide additional outlets for growers' apples.

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Table 1—Utilization of the U.S. apple crop by States, 1984

State	Total utilized production	Fresh utilization	Processed utilization
<i>Million pounds</i>			
Washington	2,950.0	2,185.0	765.0
New York	1,020.0	401.0	619.0
Michigan	770.0	290.0	480.0
Pennsylvania	575.0	207.0	368.0
California	485.0	185.0	300.0
Virginia	465.0	173.0	292.0
North Carolina	360.0	129.0	231.0
Total top 7	6,625.0	3,570.0	3,055.0
West Virginia	225.0	84.9	140.1
Ohio	135.0	102.0	33.0
Idaho	134.0	86.0	48.0
Oregon	130.0	92.0	38.0
New Jersey	110.0	64.0	46.0
Massachusetts	97.0	75.0	22.0
Illinois	90.0	67.0	23.0
Maryland	80.0	45.0	35.0
Maine	70.0	57.0	13.0
Colorado	65.0	40.0	25.0
Indiana	64.0	49.5	14.5
Wisconsin	51.0	41.5	9.5
New Hampshire	50.0	38.0	12.0
Connecticut	47.0	36.0	11.0
Utah	45.0	33.0	12.0
South Carolina	43.0	30.0	13.0
Vermont	41.0	31.0	10.0
Missouri	40.0	31.8	8.2
Kentucky	16.5	15.0	1.5
Kansas	4.8	4.2	0.6
Other States ¹	107.8	84.5	23.3
Total U.S. crop	8,271.1	4,677.4	3,593.7

¹Includes: States of Georgia, Minnesota, Delaware, Tennessee, New Mexico, Rhode Island and Iowa.

Source: Compiled from: Noncitrus Fruits and Nuts, Statistical Reporting Service, United States Department of Agriculture, July 8, 1985, pp. 4, 6, and 7.

Table 2—Utilization and value of selected noncitrus tree fruits, contiguous United States, 1984

Crop	Utilized production		Value of utilized production	
	1,000 tons	Percent	1,000 dollars	Percent
Apples	4,135.6	52.90	927,527	46.85
Peaches	1,226.2	15.70	318,862	16.11
Prunes and plums	717.5	9.19	160,947	8.13
Pears	696.8	8.93	160,752	8.11
Cherries, sweet and tart	292.0	3.74	163,254	8.25
Avocados	276.7	3.55	91,334	4.61
Nectarines	183.0	2.35	41,692	2.11
Apricots	117.1	1.50	35,498	1.79
Olives	91.7	1.18	48,315	2.44
Figs	35.4	.46	10,132	.51
Dates	22.5	.29	18,360	.93
Pomegranates	16.0	.21	3,254	.16
Total	7,810.5	100.00	1,979,927	100.00

Source: Noncitrus Fruits and Nuts, 1984 Midyear Supplement, Statistical Reporting Service, United States Department of Agriculture, July 8, 1985, p. 3

Table 3—Per capita consumption, selected fresh fruit, United States, 1970-84

Year	Apples	Oranges	Grapefruit	Peaches	Grapes	Pears
<i>Pounds</i>						
1970	17.0	16.5	8.2	5.7	2.8	2.0
1971	16.5	15.7	8.6	5.7	2.4	2.4
1972	15.8	14.5	8.6	3.9	2.2	2.4
1973	16.1	14.4	8.6	4.3	2.6	2.5
1974	16.5	14.4	8.2	4.4	2.8	2.3
1975	19.1	15.9	8.4	5.0	3.2	2.8
1976	17.1	14.7	9.2	5.2	3.2	2.6
1977	16.9	13.4	7.7	5.1	3.1	2.6
1978	17.5	13.4	8.3	5.0	3.0	2.2
1979	17.6	12.4	7.6	5.5	3.6	2.5
1980	19.1	15.8	8.0	5.8	3.7	2.4
1981	16.8	13.5	6.9	5.6	4.1	2.8
1982	17.9	12.7	7.5	4.0	5.3	3.0
1983	18.4	15.5	8.1	4.1	5.4	2.8
1984	18.1	12.8	6.1	5.4	5.4	2.6

Source: Fruit Outlook and Situation Yearbook, Economic Research Service, United States Department of Agriculture, TFS-236, October 1985, p. 35

Table 4—Per capita consumption of apples and apple products, United States, 1975-84

Year	Fresh	Canned	Juice	Frozen	Dried	Total
<i>Pounds of fresh weight equivalent</i>						
1975	19.1	4.2	4.4	0.8	1.0	29.5
1976	17.1	3.0	5.1	0.7	1.1	27.0
1977	16.9	3.3	5.1	0.7	1.0	27.0
1978	17.5	3.6	6.5	0.7	1.0	29.3
1979	17.6	3.3	8.1	0.6	1.0	30.6
1980	19.1	3.3	7.3	0.6	1.0	31.3
1981	16.8	2.7	9.9	0.6	1.1	31.1
1982	17.9	2.7	11.0	0.7	0.9	33.2
1983	18.4	3.1	13.2	0.5	0.9	36.2
1984	18.1	N/A	N/A	N/A	N/A	N/A

Source: 1985 Apple Marketing Clinic, Production and Utilization Analysis, International Apple Institute, McLean, Virginia, August 1985, Table 12, p. 2

Table 5—Cooperatives' share of U.S. apple crop by method of utilization, 64 apple cooperatives, 1984

Utilization items	U.S. apple crop	64 cooperative associations	Handled by cooperatives
----- 1,000 pounds -----			
Fresh	4,677,400	800,624	17.1
Processed:			
Canned	1,179,800	515,360	43.7
Juice and cider	1,816,400	738,668	40.7
Frozen	198,100	64,717	32.7
Other ¹	399,400	158,007	39.6
Total Processed	3,593,700	1,476,752	41.1
Total Utilization	8,271,100	2,277,376	27.5

¹Includes: Dried, vinegar, wine, jam, and fresh slices for pie filling, etc.

Table 6—Apple cooperatives by type United States, 1984

Type	Assns.	Fresh volume	Processed volume	Total utilization
Number				
Fresh marketing	41	540,235,743	0	540,235,743
Fresh & proc. mkting.	11	260,387,945	87,808,774	348,196,719
Contracting for proc.	5	0	496,621,053	496,621,053
Processing	8	0	892,322,527	892,322,527
Total	64 ¹	800,623,688	1,476,752,354	2,277,376,042
Total U.S. 1984	XX	4,677,400,000	3,593,700,000	8,271,100,000
Percent U.S.	XX	17.12	41.09	27.53

¹Total number of associations does not add to 64 because one association had both fresh and processed volume.

Table 7—Proportion of apple sales, 24 cooperatives, 1984

Type	Associations	Proportion of apple sales	
		Range	Average
Number			
Fresh marketing	6	49- 93	74
Fresh & proc. mkting.	7	44-100	76
Contracting for proc.	4	7-100	24
Processing	7	8-100	61
Total	24	7-100	59

Table 8—Membership by type association, 24 apple cooperatives, 1984

Type	Assns.	Members	Member assns.	Nonmember growers
Number				
Fresh marketing	6	819	8	0
Fresh & proc. mkting.	7	368	0	6
Contracting for proc.	4	1,195	6	500
Processing	7	4,052	18	226
Total	24	6,434	32	732

Table 9—Open and restricted membership by type association, 24 apple cooperatives, 1984

Type	Assns.	Open membership	Restricted membership
<i>Number</i>			
Fresh marketing	6	2	4
Fresh & proc. mktng.	7	4	3
Contracting for proc.	4	3	1
Processing	7	1	6
Total	24	10	14

Table 10—Member equity by type association, 54 apple cooperatives, 1983

Type	Assns.	Equity per member Range	Average	Membership average
<i>Number</i> - - - 1,000 dollars - - - <i>Number</i>				
Fresh marketing	36	1 - 115	17	91
Fresh & proc. mktng.	10	.2- 59	34	54
Contracting for proc.	3	2 - 7	4	137
Processing	5	5 - 165	12	1,023
Total	54	.2-165	15	173

Table 11—Basis for voting by type association, 24 apple cooperatives, 1984

Type	Assns.	Basis for voting			
		One-member one-vote	According to patronage		
Number	Number	Percent	Number	Percent	
Fresh marketing	6	5	83	1	17
Fresh & proc. mktng.	7	6	86	1	14
Contracting for proc.	4	4	100	0	0
Processing	7	6	86	1	14
Total	24	21	87	3	13

Table 12—Status of marketing contracts by type association, 24 apple cooperatives, 1984

Type	Assns.	Marketing contracts			
		----- Yes -----		----- No -----	
	Number	Number	Percent	Number	Percent
Fresh marketing	6	6	100	0	0
Fresh & proc. mktng.	7	3	43	4	57
Contracting for proc.	4	4	100	0	0
Processing	7	4	57	3	43
Total	24	17	71	7	29

Table 13—Contract delivery requirements, 24 apple cooperatives, 1984

Type	Assns.	100% of tonnage or acreage			Specified tonnage/acreage		None
		Number	Number	Percent	Number	Percent	
Fresh marketing	6	5	83	1	17	0	0
Fresh & proc. mktng.	7	3	43	0	0	4	0
Contracting for proc.	4	0	0	4	100	0	0
Processing	7	1	14	3	43	3	0
Total	24	9	38	8	33	7	0

Table 14—Duration of contract, 24 apple cooperatives, 1984

Type	Assns.	Duration of contract											
		1 year		None		Continuous		5 years		3 years			
No.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	
Fresh marketing	6	3	50	0	0	3	50	0	0	0	0	0	0
Fresh & proc. mktng.	7	2	29	4	57	1	14	0	0	0	0	0	0
Contracting for proc.	4	1	25	0	0	0	0	2	50	1	25	0	0
Processing	7	2	29	3	43	1	14	1	14	0	0	0	0
Total	24	8	33	7	29	5	21	3	13	1	4	0	0

Table 15—Withdrawal period of contract, 24 apple cooperatives, 1984

Type	Assns.	Withdrawal period					
		- 1 year -		- 2 years -		- None -	
		No.	No.	Pct.	No.	Pct.	No.
Fresh marketing	6	6	100	0	0	0	0
Fresh & proc. mktng.	7	3	43	0	0	4	57
Contracting for proc.	4	3	75	1	25	0	0
Processing	7	4	57	0	0	3	43
Total	24	16	67	1	4	7	29

Table 16—Facility capacity utilized during the average season by type association, 24 apple cooperatives, 1984

Type	Assns.	Physical capacity utilized			
		Range	Fresh	Average	Processed
	Number	Percent			
Fresh marketing	6	55-100	84	0	0
Fresh & proc. mktng.	7	30-100	93	30-100	94
Contracting for proc.	4	0- 0	0	40-100	57
Processing	7	0- 0	0	30-100	92
Total	24	30-100	86	30-100	82

Table 17—Number of directors by type of association, 24 apple cooperatives, 1984

Type	Associations	Directors	
		Range	Average
		Number	
Fresh marketing	6	6-11	9
Fresh & processed marketing	7	5-14	8
Contracting for processors	4	10-32	16
Processing	7	7-18	12
Total	24	5-32	11

Table 18—Directors' term of office by type association, 24 apple cooperatives, 1984

Type	Assns.	Directors' term of office				
		1 year	2 years	3 years	4 years	Indef.
<i>Number</i>						
Fresh marketing	6	0	0	5	0	1
Fresh & proc mktng.	7	2	0	4	0	1
Contracting for proc.	4	0	1	2	1	0
Processing	7	1	1	5	0	0
Total	24	3	2	16	1	2

Table 19—Number of employees by type association, 24 apple cooperatives, 1984

Type	Assns.	Full-time		Part-time	
		Range	Average	Range	Average
<i>Number</i>					
Fresh marketing	6	10-300	84	0- 70	64
Fresh & proc. mktng.	7	1-125	23	3- 80	35
Contracting for proc.	4	1- 3	3	0- 0	0
Processing	7	40-900	317	0-900	454
Total	24	1-900	108	0-900	121

Table 20—Method of payment, 24 apple cooperatives, 1984

Type	Assns.	Pool	Indi-	Indi-	Grower	Total
		payment plan	vidual grower account	vidual assn. account	paid direct by buyer	
<i>Number</i> ----- <i>Percent of volume</i> -----						
Fresh marketing	6	59.57	0.00	40.43	0.00	100
Fresh & proc. mktng.	7	87.97	12.03	0.00	0.00	100
Contracting for proc.	4	21.03	11.67	0.00	67.30	100
Processing	7	89.07	10.93	0.00	0.00	100
Total	24	68.15	8.89	8.50	14.46	100

Table 21—Method of sale used by 24 apple cooperatives, 1984

Type	Assns.	Bro- kers	Con- tracts	Direct to chains	Co-op sales agency	Direct to:				Total
						Other buyers	Proces- sors	Other packers		
<i>Number</i>									<i>Percent of volume</i>	
Fresh marketing	6	60.49	0.00	24.95	12.97	1.59	0.00	0.00	100	
Fresh & proc. mkting.	7	32.86	0.00	28.08	0.00	1.41	34.64	3.01	100	
Contracting for proc.	4	0.84	97.53	0.00	0.00	1.63	0.00	0.00	100	
Processing	7	76.94	0.00	14.50	3.10	5.46	0.00	0.00	100	
Total	24	53.23	20.96	14.78	4.23	3.47	3.06	0.27	100	

Table 22—Terms of sale, 24 apple cooperatives, 1984

Type	Assns.	F.o.b. sales	Delivered sales		Total
			<i>Percent of volume</i>		
<i>Number</i>				<i>Percent of volume</i>	
Fresh marketing	6	100.00	0.00	0.00	100
Fresh & proc. mkting.	7	74.38	25.62	25.62	100
Contracting for proc.	4	2.47	97.53	97.53	100
Processing	7	86.16	13.84	13.84	100
Total	24	70.04	29.96	29.96	100

Table 23—Method of shipping used by 24 apple cooperatives, 1984

Type	Assns.	Truck	Rail		Total
			<i>Percent of volume</i>		
<i>Number</i>				<i>Percent of volume</i>	
Fresh marketing	6	92.18	7.82	7.82	100
Fresh & proc. mkting.	7	97.81	2.19	2.19	100
Contracting for proc.	4	100.00	0.00	0.00	100
Processing	7	92.57	7.43	7.43	100
Total	24	94.36	5.64	5.64	100

Table 24—Grading and inspection methods used by 24 apple cooperatives, 1984

Type	Assns.	Federal-State	Inspected by co-op	Total
<i>Number</i> ----- <i>Percent of volume</i> -----				
Fresh marketing	6	100.00	0.00	100
Fresh & proc. mktng.	7	96.24	3.76	100
Contracting for proc.	4	100.00	0.00	100
Processing	7	72.68	27.32	100
Total	24	86.37	13.63	100

Table 25—Brand policies, 24 apple cooperatives, 1984

Type	Assns.	Co-ops labels	Chain store	Other buyers labels	Sold in bulk unlabeled	Total
<i>Number</i> ----- <i>Percent of volume</i> -----						
Fresh marketing	6	88.90	0.00	11.10	0.00	100
Fresh & proc. mktng.	7	58.19	0.00	4.16	37.65	100
Contracting for proc.	4	11.67	0.00	2.47	85.86	100
Processing	7	64.43	0.18	35.39	0.00	100
Total	24	57.68	0.09	20.45	21.78	100

Table 26—Sources of equity capital, 24 apple cooperatives, 1984

Type	Assns.	Per unit capital retains		Retained patronage		Direct cash investment	
		No.	No.	Pct.	No.	Pct.	No.
Fresh marketing	6	2	100	3	100	0	0
Fresh & proc. mktng.	7	4	100	1	100	1	100
Contracting for proc.	4	2	100	1	100	1	100
Processing	7	3	100	4	100	0	0
Total	24	111	XX	9	XX	2	XX

¹Two associations relied on both capital retains and retained patronage.

Table 27—Revolving period for equity capital, 24 apple cooperatives, 1984

Type	Assns.	Revolving period						None
		5 Yrs.	7 Yrs.	9 Yrs.	10 Yrs.	15 Yrs.	20 Yrs.	
<i>Number</i>								
Fresh marketing	6	0	1	1	3	0	0	1
Fresh & proc. mkting.	7	0	1	1	2	0	1	2
Contracting for proc.	4	1	0	0	1	0	0	2
Processing	7	0	2	0	0	1	0	4
Total	24	1	4	2	6	1	1	9

Table 28—Important problem areas, 24 apple cooperatives, 1984

Problem areas	Percent of cooperatives
Over supply or production	22
Imports	14
Exports	11
Competition	10
Quality	10
Costs	6
Low grower returns	5
Regulatory	3
Growers undercapitalized	3
Lack of professional marketers	3
Over capacity in processing facilities	3
Other	10
Total	100

Table 29—Imported apple juice concentrate, United States, 1980-1984

Item	1980	1981	1982	1983	1984
<i>Thousands</i>					
Gallons imported (Single strength)	70,325	76,441	139,827	145,175	209,188
Bushels equivalent	19,589	21,293	38,949	40,439	58,270
Total bushels used for juice (Domestic + imported)	70,468	64,148	81,992	87,694	103,482
Imported bushels as percent of total	27.8%	33.2%	47.5%	46.1%	56.3%

Note: Gallons imported are USDA data with the fresh equivalent based on a conversion rate of 3.59 gallons per 42 lb. unit.

Source: 1985 and 1986 Apple Marketing Clinic, Production and Utilization Analysis, International Apple Institute, McLean, Virginia, August 1985, p. 16; August 1986, p. 16A.

Table 30—Apple balance of trade, fresh and fresh and concentrate, United States, 1980-1984

Item	1980	1981	1982	1983	1984
<i>1,000-42 lb. units</i>					
Fresh					
Exports	16,032	14,368	14,346	11,672	10,836
Imports	4,142	3,508	4,627	5,480	5,440
Total trade	20,174	17,876	18,973	17,152	16,276
U.S. net	+ 11,890	+ 10,860	+ 9,719	+ 6,192	+ 5,396
	=====	=====	=====	=====	=====
Exports as % of Total Fresh Trade	79%	80%	76%	68%	67%
Total U.S. Net (Fresh + Concentrate)	- 7,699	-10,433	-29,230	-34,247	-52,874

Source: 1985 and 1986 Apple Marketing Clinic, Production, and Utilization Analysis, International Apple Institute, August 1985, p. 18; August 1986, p. 18A.

Table 31—Roles of 24 associations in the apple industry during the next five years, 1984

Roles	Percent of co-ops ¹
Expand	60
Take care of all members fruit	26
Develop new products	9
Financial	9
Improve quality	4
Other	9

¹Some associations gave more than one role.

Appendix table 1—Apples: U.S. production, utilization, and season-average prices, 1970-84¹

Year	Production		Utilization		Grower prices ¹		All
	Total ²	Utilized	Fresh	Processing	Fresh	Processing	
- - - - - Million pounds - - - - -							
1970	6,397.7	6,258.4	3,531.5	2,726.9	6.53	39.20	4.54
1971	6,373.2	6,082.7	3,483.9	2,598.8	6.97	43.40	4.92
1972	5,878.8	5,867.5	3,342.0	2,525.5	8.92	62.80	6.43
1973	6,265.0	6,251.5	3,539.4	2,712.1	10.70	125.00	8.80
1974	6,579.7	6,529.8	3,690.5	2,839.3	11.10	96.00	8.40
1975	7,530.0	7,102.6	4,357.0	2,745.6	8.80	56.80	6.50
1976	6,472.2	6,466.9	3,915.8	2,551.1	11.50	108.00	9.10
1977	6,739.6	6,710.0	3,859.6	2,850.4	13.80	122.00	10.60
1978	7,596.9	7,544.0	4,210.4	3,333.6	13.90	117.00	10.40
1979	8,126.1	8,101.2	4,288.6	3,812.6	15.40	114.00	10.90
1980	8,818.4	8,800.4	4,934.1	3,866.3	12.10	84.00	8.70
1981	7,739.6	7,692.9	4,442.2	3,250.7	15.40	102.00	11.10
1982	8,122.0	8,110.2	4,536.7	3,573.5	13.20	118.00	10.00
1983	8,373.0	8,352.4	4,619.8	3,732.6	14.90	103.00	10.50
1984 ³	8,285.5	8,271.1	4,677.4	3,593.7	15.50	112.00	11.20

¹Commercial crop in orchards of 100 or more bearing trees.

²Includes unharvested production and harvested not sold.

³Preliminary.

Source: Fruit Outlook and Situation Yearbook, Economic Research Service, U.S. Department of Agriculture, TFS-236, October 1985, Table 7, p. 22

Appendix table 2—U.S. apples: Processed utilization and season-average grower prices, 1970-84¹

Year	Canned		Juice & cider		Frozen		Dried		Other ²	
	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price
	Mil. lbs.	\$/ ton	Mil. lbs.	\$/ ton	Mil. lbs.	\$/ ton	Mil. lbs.	\$/ ton	Mil. lbs.	\$/ ton
1970	1,158.5	47.90	1,031.7	27.90	203.0	53.40	189.8	33.20	143.9	37.30
1971	1,093.5	49.40	1,087.0	36.10	190.5	52.20	96.2	45.40	131.6	37.50
1972	976.9	67.40	1,028.6	55.70	235.3	76.00	148.6	68.60	136.1	42.40
1973	1,255.4	131.00	822.2	98.20	259.2	171.00	247.7	104.00	127.6	103.00
1974	1,225.6	123.00	1,030.7	64.70	181.7	121.00	197.2	99.70	204.1	64.80
1975	1,026.7	57.50	1,191.6	52.60	206.6	73.10	229.5	65.50	91.2	47.40
1976	919.9	120.00	1,109.1	91.60	220.4	143.00	229.3	105.00	72.4	114.00
1977	1,075.9	133.00	1,267.2	109.00	160.9	138.00	225.5	132.00	120.9	112.00
1978	1,224.2	199.00	1,494.6	110.00	207.4	126.00	221.0	154.00	186.4	115.00
1979	1,336.7	125.00	1,953.8	103.00	136.6	133.00	255.7	135.00	129.8	110.00
1980	1,202.4	97.40	2,136.9	73.70	167.5	112.00	194.7	78.70	164.8	91.00
1981	1,002.4	121.00	1,798.4	87.90	172.7	160.00	190.0	77.10	87.2	109.00
1982	1,248.6	132.00	1,807.8	103.00	190.8	143.00	209.9	132.00	116.4	123.00
1983	1,200.8	117.00	1,983.5	89.00	169.6	161.00	283.3	106.00	95.4	111.00
1984 ³	1,179.8	135.00	1,816.4	96.00	198.1	151.00	303.6	85.00	95.8	132.00

¹Commercial crop.

²Includes vinegar, wine, jam, fresh slices for pie making.

³Preliminary.

Source: Fruit Outlook and Situation Yearbook, Economic Research Service, U.S. Department of Agriculture, TFS-236, October 1985, Table 8, p. 22

Appendix table 3—Other fruit and vegetables handled by 24 apple associations, 1984

Commodities	Fresh marketing		Fresh & proc. marketing		Contracting for proc.		Processing		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Associations	6	25.0	7	29.2	4	16.6	7	29.2	24	100.0
Apples only	0	0.0	4	57.1	1	25.0	1	14.3	6	25.0
Pears	6	100.0	3	42.9	1	25.0	1	14.3	11	45.8
Cherries	2	33.3	1	14.3	3	75.0	5	71.4	11	45.8
Peaches	1	16.7	1	14.3	1	25.0	2	28.6	5	20.8
Plums	1	16.7	1	14.3	2	50.0	1	14.3	5	20.8
Apricots	2	33.3	0	0.0	1	25.0	0	0.0	3	12.5
Asparagus	0	0.0	0	0.0	2	50.0	1	14.3	3	12.5
Blueberries	0	0.0	0	0.0	1	25.0	2	28.6	3	12.5
Grapes	0	0.0	0	0.0	1	25.0	2	28.6	3	12.5
Prunes	1	16.7	0	0.0	1	25.0	0	0.0	2	8.3
Strawberries	0	0.0	0	0.0	0	0.0	2	28.6	2	8.3
Green Beans	0	0.0	0	0.0	1	25.0	1	14.3	2	8.3
Potatoes	0	0.0	0	0.0	2	25.0	0	0.0	2	8.3
Cabbage	0	0.0	0	0.0	2	25.0	0	0.0	2	8.3
Crabapples	1	16.7	0	0.0	0	0.0	0	0.0	1	4.2
Sweet corn	0	0.0	0	0.0	1	25.0	0	0.0	1	4.2
Cucumbers	0	0.0	0	0.0	1	25.0	0	0.0	1	4.2
Tomatoes	0	0.0	0	0.0	1	25.0	0	0.0	1	4.2
Green peas	0	0.0	0	0.0	1	25.0	0	0.0	1	4.2
Beets	0	0.0	0	0.0	1	25.0	0	0.0	1	4.2
Popcorn	0	0.0	0	0.0	1	25.0	0	0.0	1	4.2
Carrots	0	0.0	0	0.0	1	25.0	0	0.0	1	4.2
Greens	0	0.0	0	0.0	1	25.0	0	0.0	1	4.2
Green peas	0	0.0	0	0.0	1	25.0	0	0.0	1	4.2
Lima beans	0	0.0	0	0.0	1	25.0	0	0.0	1	4.2
Raspberries	0	0.0	0	0.0	0	0.0	1	14.3	1	4.2
Citrus	0	0.0	0	0.0	0	0.0	1	14.3	1	4.2

Appendix table 4—Services performed by 24 apple associations, 1984

Services performed	Fresh marketing		Fresh & proc. marketing		Contracting for proc.		Processing		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Associations	6	25.0	7	29.2	4	16.6	7	29.2	24	100.0
Sales										
Sales office	2	33.3	5	71.4	1	25.0	5	71.4	13	54.2
Private sales agent	2	33.3	2	28.6	0	.0	0	.0	4	16.7
Federated sales agent	2	33.3	0	.0	0	.0	2	28.6	4	16.7
Contracting	0	.0	0	.0	3	75.0	0	.0	3	12.5
Bargain with proc.	0	.0	0	.0	1	25.0	0	.0	1	4.2
Storage										
Regular atmosphere	5	83.3	6	85.7	0	.0	1	14.3	12	50.0
Controlled atmosphere	5	83.3	6	85.7	0	.0	1	14.3	12	50.0
Grading	5	83.3	6	85.7	0	.0	0	.0	11	45.8
Packing	5	83.3	6	85.7	0	.0	0	.0	11	45.8
Processing										
Canning	1	16.7	0	.0	0	.0	4	57.1	5	20.8
Bottling	0	.0	0	.0	0	.0	4	57.1	4	16.7
Freezing & drying	0	.0	0	.0	0	.0	4	57.1	4	16.7
Supplies	0	.0	3	42.9	0	.0	1	14.3	4	16.7
Hauling to packing	2	33.3	0	.0	0	.0	0	.0	2	8.3
Harvesting	1	16.7	0	.0	0	.0	0	.0	1	4.2
Fieldman	0	.0	0	.0	1	25.0	0	.0	1	4.2

**U.S. Department of Agriculture
Agricultural Cooperative Service
Washington, D.C. 20250**

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